

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058484 A1

(51) International Patent Classification⁷:
23/10

B01J 21/16,

(74) Agent: SCHALKWIJK, Pieter, Cornelis; Akzo Nobel N.V., Intellectual Property Dept. (Dept. AIP), P.O. Box 9300, NL-6800 SB Arnhem (NL).

(21) International Application Number:

PCT/EP2004/013914

(22) International Filing Date: 6 December 2004 (06.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/527,758 9 December 2003 (09.12.2003) US
04075064.8 9 January 2004 (09.01.2004) EP

(71) Applicant (for all designated States except US): AKZO NOBEL N.V. [NL/NL]; Verperweg 76, NL-6824 BM Arnhem (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): JONES, William [GB/GB]; 56, Lantree Crescent, Cambridge, CB2 2NJ (GB). STAMIRE, Dennis [US/US]; 3401 Colony Plaza, Newport Beach, CA 92660 (US). O'CONNOR, Paul [NL/NL]; Hogebrinkerkweg 9, NL-3871 KM Hoevelaken (NL). BRADY, Michael [US/US]; 4248 Rhodes Avenue, Studio City, CA 91604 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/058484 A1

(54) Title: CATALYST COMPOSITION COMPRISING ANIONIC CLAY AND RARE EARTH METALS, ITS PREPARATION AND USE IN FCC

(57) Abstract: The invention relates to a catalyst composition comprising anionic clay, lanthanum (hydr)oxide carbonate, and cerium oxide. This composition can suitably be used in FCC for the reduction of NO_x and/or SO_x emissions, the reduction of the S and/or N-content in fuels, and as a metal trap. The composition can be prepared by forming a precipitate from a solution comprising a divalent metal salt, a trivalent metal salt, a lanthanum salt, and a cerium salt, calcining the precipitate at 200-800°C, and rehydrating the calcined precipitate in the presence of a carbonate source to form a composition comprising anionic clay, lanthanum (hydr)oxide carbonate, and cerium oxide.